

Remarks

Claims 1-10 are pending in this application.

Claims 1-6 have been allowed. Claims 7 and 9 have been rejected under 35 USC 102(b) as anticipated by Kuzemenko, and Claim 8 has been rejected under 35 USC 103(a) as unpatentable over Kuzemenko. New claim 10 is the same as 9, but dependent on 8.

Kuzemenko describes a Fabry Perot sensing interferometer (FPI). One mirror of the FPI is formed by a reflective membrane 15 stretched horizontally across the vertical recess of a housing 10. The other mirror is formed by the reflective end of an optical fiber 17 positioned vertically in the centre of the recess a short distance from the membrane. The space between the two forms the FPI cavity. An acoustic wave will deflect the membrane, changing the cavity pathlength and thereby produce a signal. The interferometer is formed by the optical fiber tip and the membrane, and the housing simply holds the two relative to each other.

Claim 7 has been amended to clarify further the construction of the device of the invention, and requires the interferometer substrate to define a partially reflective surface with the parylene film, so that the interface forms one of the mirror surfaces of the cavity.

Thus, the interferometer sensor of the instant application has an underlying substrate, the surface of which forms a partially reflective interface with the polymer film directly on top (as required by amended claim 7). The top surface of the polymer film acts as the second mirror surface to form the FPI, with the cavity defined by the thickness of the polymer film. An acoustic wave modulates the optical thickness of the polymer film and therefore alters the cavity pathlength - this is in

direct contrast with Kuzemenko which relies on physical displacement of the whole film to modulate the cavity pathlength.

The "interferometer substrate" of the instant application forms an integral part of the FPI and forms one of the cavity mirrors; and the interferometer film which defines the cavity thickness is formed directly on top of the substrate.

There is no such "interferometer substrate" in Kuzemenko, and the film is instead suspended over a cavity in a housing. The housing 10 which supports the film 15 is not an interferometer substrate, and does not have a partially reflective surface as required by amended claim 7 for forming one mirror of the interferometer cavity.

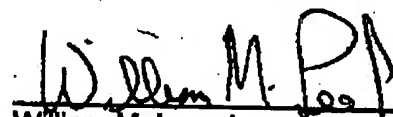
The device of the invention is completely different in structure and function to that of Kuzemenko, and the amendment to claim 7 clarifies this.

It is submitted that the amendment to claim 7 also overcomes the rejections raised against dependent claims 8 and 9. In particular, the product of the product-by-process claim 8 is not the same or an obvious modification to the product of Kuzemenko.

In view of the arguments above it is submitted that this application is now in order for allowance and such action is therefore solicited.

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Respectfully submitted,



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